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The Lessons of Operation Desert Hammer VI, Part II: Doctrine

The Lesson of Operation Desert Hammer VI: Our Doctrine Is Basically Sound

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Operation Desert Hammer VI (ODH VI) represented the first time that the Army fielded a battalion task force, digitally linked across Battlefield Operating Systems (BOS), and put it to a severe test at the National Training Center. The task force possessed over 120 digital systems that linked the key leaders of the task force with digital communications. Although the task force was not 100-percent digitized, significant doctrinal lessons did emerge from ODH VI that indicate the future direction of tactical warfare.

Importance of Fundamentals

The overarching lesson of ODH VI was that fundamental combat skills remain essential for battlefield success. Leaders and soldiers must understand the essential business of warfighting. The extent to which lethality, survivability, and tempo are achieved depends upon the commander's ability to create favorable conditions on the battlefield. The commander must see the battlefield as a precondition for directing his unit to maneuver and shape the battlefield. Only by appreciating the terrain, enemy, and friendly forces can the commander identify and choose those times and locations at which favorable conditions can be achieved.

Seeing the Battlefield

Author Stephen R. Covey remarked that, "How we see the problem is the problem." In a similar way, the real challenge to battle command is to act on a true picture of the battlefield, rather than an incomplete or false picture. Several of the systems used in ODH VI reveal how future battle command systems will aid the combat leader.

The All-Source Analysis System (ASAS) provides access to nearly all available battlefield sensors (up to national level assets), permitting an "over-the-horizon" view of the enemy.

Scout platoon enhancements -- second-generation thermal sights, driver thermal viewers, and hand-launched unmanned aerial vehicles (HL-UAV) -- give the scout platoon "observation standoff," the ability to see the enemy well beyond his ability to detect.

Far-target designation (the M1A2's ability to accurately locate key terrain, locations, or enemy with its laser rangefinder) offers the ability to digitally paint a picture of the battlefield.

Future digital systems will offer "terrain analysis support systems," which permit detailed review of terrain using digital map databases and powerful computers. Leaders will be able to review elevation, conduct line-of-sight analysis, review weather effects, look at terrain in three dimensions, and even conduct movement rehearsals. This capability will greatly facilitate understanding of the battlefield, and will further benefit leader reconnaissance.

Digital systems that provide shared position location lead to better situational awareness. The Intervehicular Information System (IVIS), Battalion and Below Command and Control (B2C2), the Enhanced Position Location Reporting System (EPLRS), and other systems will complement a leader's situational awareness derived from personal observation.

Improvements to C2

The use of the Battle Command Vehicle (BCV) during ODH VI heralds future changes to C2 organization and facilities. In fact, we may eventually abandon our current C2 architecture. In the interim, the introduction of digital workstations signals a shift from acetate overlays and status charts to "battle integration stations." BCVs will permit more of the planning and battle tracking to occur forward with the commander, perhaps reducing the role of the Tactical Operations Center (TOC) and Combat Trains Command Post (CTCP). Within BCVs and other C2 facilities, the use of local area networks and file servers will permit different staff sections to simultaneously share the same data on their workstations. Commanders must determine the role of the C2 facilities, and the specific function of each battle integration station, situating them where they will best assist command and control of the unit. The commander, executive officer, and key staff members must have ready access to information on the battle integration stations.

NTC observer/controllers (O/Cs) identified that digital systems can accelerate the staff planning process, and will increase the quantity and accuracy of information available. Staffs must establish procedures to sift through the greater quantities of information provided and provide rapid staff assessments. Provided that information is regularly transmitted and updated, staff members should be able to accelerate their planning process and provide higher quality estimates to the commander. Prompt forwarding of warning orders and initial overlays permits improved parallel planning to occur, providing critical preparation time to subordinate units. These digital systems also cause changes in reporting formats and procedures (as these systems permit reports that are more complete, pre-formatted, and sent digitally).

O/Cs observed increased digital coordination of overlays and positions. There is potential for units to adopt what can be called a "continuous planning process." This process features warning orders that expand in detail as time goes on. Updates in intelligence can be swiftly forwarded within the unit, and adjustments in plans can be quickly disseminated as well. If time is available, subordinate commanders may be able to participate in course-of-action analysis.

O/Cs also highlighted that digital communications increase the leader's use of his valuable face-to-face time with his subordinates. Digital systems can be used to assist in the planning and coordination of operations. Staff updates and overlays, sent digitally, allow commanders and other staff sections to remain at more critical locations, rather than link up face-to-face to obtain information.

Such a procedure improves preparation time, allows key leaders to spend more time with their units, and permits greater use of parallel planning. Leaders will still communicate face to face with subordinates at critical times, yet be able to use this time to fully communicate their intent.

Synchronization/Massing of Combat Power

ODH VI provided many examples of the use of IVIS, POSNAV, and other navigation aids to move precisely to needed positions. This contributed to the ODH VI task force attaining higher percentages of direct fire systems participating in battles than non-digitized units. Larger numbers of artillery and mortar missions were also observed. Despite this, battle outcomes were not decidedly superior to non-digitized units. Clearly, simply "participating" in a battle, or firing more artillery rounds, are not the only essential features of battlefield success. Commanders must seek battle under favorable conditions.

During some ODH VI missions, although higher than average participation rates were observed, rounds fired and loss exchange rates were low. This can be explained by piecemealing, or engagement under unfavorable conditions, such that the task force was "chewed up" without gaining a clear advantage over the enemy. In other missions, participation rates and rounds fired per vehicle were above average, but enemy numbers were large as well, so that both enemy and friendly attrition were high (due to inability to create favorable conditions). This evidence suggests that the digital task force was not able to create favorable conditions during its missions. Future battle command system design must incorporate specific aids to facilitate the commander's identification of opportunities for favorable conditions, and his ability to synchronize and mass combat power.

Expanded Battlespace

O/Cs identified potential advantage from the ability to rapidly concentrate fires and maneuver assets at the critical points of the battle. The linkage with situational awareness, and increased fielding of advanced acquisition devices, could entail expanded battlespace for future battalion task forces. Simply put, the task force can initiate actions earlier (in both time and space) against the enemy. Operations should be structured to take advantage of this capability. Fires are directed to pin the enemy in place throughout the depth of his position. In the offense, a rapid tempo is attained which destroys the enemy piecemeal by swiftly biting off small elements of his force, destroying them, countering any enemy reaction, and moving on to "bite off" the next portion of the enemy force. Systems capable of far-target designation are used to cover the enemy with artillery and mortar fire at key points.

Situational Awareness

Interconnectivity and communications problems prevented realization of the the full benefit of digital situational awareness. Screens did not display all possible icons and visible icons were frequently out of date. Generally, companies and platoons possessed situational awareness in their immediate areas, but lacked full awareness of other adjacent units. As operations progressed, interconnectivity proved to be fragile as units maneuvered and took losses. Therefore, tactical decisions were based on a partial appreciation of friendly positions and status. This lack of complete friendly situational awareness also impacted on fratricide.

There is a balance to be struck between visual situational awareness and digital situational awareness. Digital situational awareness cannot be expected to be as complete or timely as situational awareness that the commander observes for himself. Therefore, there are times when a leader must have his head out of the hatch and personally observe.

Digital situational awareness (watching the screen) should only be used as a supplement, and as a replacement only when visual situational awareness is not possible due to distance or limited visibility conditions. Of course, leaders at different levels will need a different balance between digital situational awareness and visual.

Integration of Digital Systems

During ODH VI, units often executed basic troop-leading procedures, then worked with digital systems as time was available. NTC O/Cs and subject matter experts noted that digital systems must be fully integrated into troop-leading procedures if any benefit is to be realized. Digital overlays and task aids need to be considered a routine part of a unit's preparation for, and execution of, operations. As such, preparation of digital equipment, creation of dissemination of overlays, digital Fragmentary Orders (FRAGOs), and other steps should be fully integrated into the time management process prior to operations.

Breaching Operations

The ODH VI task force used its digital systems for precise execution of breaching operations, using several adjusted tactics, techniques, and procedures (TTP). Units accurately reported the extent and limits of obstacles digitally. When they located bypasses, the scouts could transmit the needed waypoints to the task force so that a bypass could be accomplished rapidly without units blundering into the obstacle. If breaching was required, covering fires could be established with greater precision. Far-target designation was used to direct fires that suppressed enemy locations and to call in obscuration at the desired points.

In the future, since the commander will have near-real-time confirmation of the covering force being in place, breaching assets can rapidly move up. Once the breach is made, the specific location of the breach can be rapidly disseminated digitally, and the exploiting force can move through and rapidly deploy on the other side of the obstacle.

Fire Support Impacts

The ODH VI task force had over 25 systems that could digitally call for fire (M1A2s, IVIS-equipped Bradleys, and the Bradley FIST-V system). As a result, the number of potential observers on the battlefield multiplied dramatically. This multitude of observers, if uncontrolled, will create fire support management problems. During ODH VI, a fire support officer received 11 calls for fire within 3 minutes. FSOs must be prepared for greater peak demands. To avoid similar problems, units must have procedures to manage calls for fire. Systems with far-target designation capability may be designated as "observing vehicles." FISTs and FSOs must closely monitor calls for fire, ensuring that their commander's intent for fires is being met. In light of this, commanders must express detailed intent and establish flexible priorities of fires, as the increased tempo of the battlefield may render a fixed priority obsolete quickly.

As we gain experience with digital battle command systems, we may find that we can adopt radically altered fire support structures. Analyses at the NTC and simulation gaming both indicate that the value of indirect fires increases as the response time decreases. The greatest improvements in fire support lethality may come from linking howitzers directly to observers, cutting out middlemen, and cutting the response time required for indirect fire to nearly the minimum -- the projectile's time of flight. For example, the commander may want mortars and selected howitzers linked directly with his scouts for immediate responsiveness. Such linkups must be strictly controlled. The benefits of immediate fire support must be balanced against the benefits we gain from the massing of large numbers of cannon. We must be careful not to forsake the ability to mass fires from all available tubes when needed.

The Impact on Logistics

The TF CTCP used its available digital capabilities to better execute logistics. IVIS was used to maintain awareness of the TF's current dispositions. B2C2 was used to communicate with the first sergeant. EPLRS was used to send reports to the brigade. Future capabilities will permit an unprecedented level of "precision logistics," permitting efficient distribution and timely support. Automated reports (automatically rolled up by unit) permit logistics staff officers to build an accurate and detailed picture of the status of supported units and supporting assets alike. Linkages between digital systems (such as EPLRS) and the Unit Level Logistics System (ULLS) will permit requisitioning over radio nets rather than physical transfer of disks.

Digital systems will permit improvement in medical support, allowing fast, accurate movement of medics to the correct site (through navigation aids). Digitally-enhanced situational awareness will allow evacuation to the nearest aid station, rather than the unit's own aid station. Digital systems also will permit the use of Television Medicine (TELE-MED), permitting doctors to diagnose patients in the forward battle area, and treat them, through the camera and hands of the combat medic. This capability will permit earlier, better treatment of wounds and will help save soldiers' lives.

Conclusions

As a partially digitized force executing current doctrine, the ODH VI task force blazed a trail in our attempt to understand future warfighting. It can be said at this point that we have not identified any necessary fundamental changes in our doctrine, but that each new digital system brings with it TTP that alters the way soldiers, leaders, and units fight. Digital battle command systems can allow us to better execute our current doctrine. Yet, there is undoubtedly a capability for a new way of warfighting. All available, relevant information must be provided to commanders and their units to yield the greatest advantages in lethality, survivability, and tempo. Tactics, techniques, and procedures must address the new capabilities offered by each system (as it is fielded) and work these capabilities into a tactical framework that yields consistent battlefield success. On the basis of ODH VI, this future tactical framework will include:

Integrated use of digital systems within fundamental warfighting tasks
Units better able to see the battlefield
Units better able to identify opportunities for, and create, favorable conditions
Fighting in extended battlespace
Use of precision logistics Properly focused battlefield information permits the precise application of combat power. We must develop an information advantage over the enemy in order to obtain advantages

in lethality, survivability, and tempo. At this point, we are at the forward edge of understanding the full impact of digitized systems. Our challenge is to avoid the kind of nearsightedness that obscured the potential of the machine gun prior to World War I, or the tank and airplane after World War I. Our current digital systems represent initial attempts at harnessing information. We must recognize their shortfalls, correct them as they are identified, and work toward objective systems that better harness the power they offer the commander in the future.

Go to Next Section: Lessons of Desert Hammer VI: Part III

Return to the Table of Contents

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